

DECnet-DOS

Getting Started

November 1989

This manual provides an overview of basic tasks that can be performed over the DECnet network using DECnet-DOS. It introduces frequently used DECnet-DOS commands.

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Operating System and Version: MS-DOS V3.1
MS-DOS V3.2
MS-DOS V3.3
MS-DOS V4.0

Software Version: DECnet-DOS V3.0

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
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Preface

DECnet-DOS™ is a communications software product that lets you use your personal computer as a node in a DECnet™ network. DECnet-DOS Version 3.0 on industry-compatible personal computers runs the MS-DOS™ or PC DOS™ operating systems. For a list of all supported personal computers and supported operating systems, see the *DECnet PCSA Client for DOS Software Product Description*.

In this manual:

- The term “DOS” refers to MS-DOS or PC DOS running on industry-compatible personal computers.
- The term “DECnet-DOS” refers to DECnet-DOS Version 3.0 on supported industry-compatible systems that run the DOS operating system.
- The term “personal computer” refers to all industry-compatible personal computers.

Objectives of This Manual

DECnet-DOS Getting Started provides an overview of the DECnet-DOS product and introduces the various DECnet-DOS utilities. This guide also provides suggested reading paths that indicate a logical way to use the DECnet-DOS documentation set. This guide does not describe the hardware and software installation procedures. You should install DECnet-DOS before reading this manual. To install DECnet-DOS, refer to *Installing DECnet PCSA Client for DOS (with Diskettes)*.

Intended Audience

New DECnet-DOS users who may be unfamiliar with networking concepts and terminology should read this manual. Users should be familiar with personal computers and have a working knowledge of basic DOS commands.

How to Use This Manual

This manual consists of three chapters:

- | | |
|-----------|---|
| Chapter 1 | Introduces DECnet-DOS and defines basic concepts within a DECnet environment. |
| Chapter 2 | Introduces the DECnet-DOS utilities. |
| Chapter 3 | Describes how to use the DECnet-DOS user interface. |

Graphic Conventions Used in This Document

The following graphic conventions are used in this manual:

Convention	Meaning
<i>special type</i>	Indicates examples of system output or user input. System output is in black; user input is in red.
COMMAND	Bold characters represent acceptable abbreviations for commands. For example, DELETE indicates that the acceptable abbreviation for the DELETE command is DEL.
UPPERCASE	In commands and examples, indicates that you should enter the exact characters shown. However, you may enter them in either uppercase or lowercase.
<i>italics</i>	In commands and examples, indicates a value that either the system supplies or you should supply.
key	Indicates that you should press the specified key. CTRL/x indicates that you should hold down the Control key while you press the <i>x</i> key, where <i>x</i> is a letter.

Convention	Meaning
Return	Indicates that you should press the key that executes commands. This key is Enter , Return , or ↵ , depending on your keyboard.

Associated Documents

The following documents are included in the DECnet-DOS documentation set:

- *Installing DECnet PCSA Client for DOS (with Diskettes)*

This guide describes procedures for installing and verifying the DECnet PCSA Client software on selected personal computers. This guide addresses a varied audience by providing the following:

- Instructions for using the automated installation procedure for the nontechnical end-user.
- Reference material for the technically oriented user who wants to bypass the automated system prompting.

- *DECnet-DOS User's Guide*

This manual describes the DECnet-DOS utilities and tells how to use them. It also provides an overview of network concepts and defines network terms. The DECnet-DOS utilities discussed in the user's guide include:

- Job Spawner (Spawner)
- File Access Listener (FAL)
- Network File Transfer (NFT)
- Network Device Utility (NDU)
- Mail Utility (MAIL)

- *DECnet-DOS SETHOST Terminal Emulation Guide*

This guide describes the SETHOST network virtual terminal utility. It explains how to use SETHOST and the set-up screens to connect to a host node and emulate a terminal connected to that node.

This guide also tells how to use scripts, which are text files containing commands that allow SETHOST to perform many operations automatically.

- *DECnet-DOS Network Management Guide*

This manual describes the Network Control Program (NCP), the Network Management Listener (NML), and the Loopback Mirror (MIRROR). It explains how to use NCP to manage your personal computer and monitor the local node; how to use NML to monitor remote nodes; and how to use loop commands and the MIRROR to perform loopback tests for troubleshooting. The management guide also details the commands and command syntax for NCP.

- *DECnet-DOS Programmer's Reference Manual*

This manual documents the programming interface and language library provided in the DECnet-DOS kit. This manual contains three parts: Part I provides a tutorial on writing network applications; Part II details the programming utilities and network programming calls used in the creation of DECnet-DOS application programs; Part III provides reference information in six appendixes.

You should also have available the installation guide and manuals for the DOS operating system and for your personal computer.

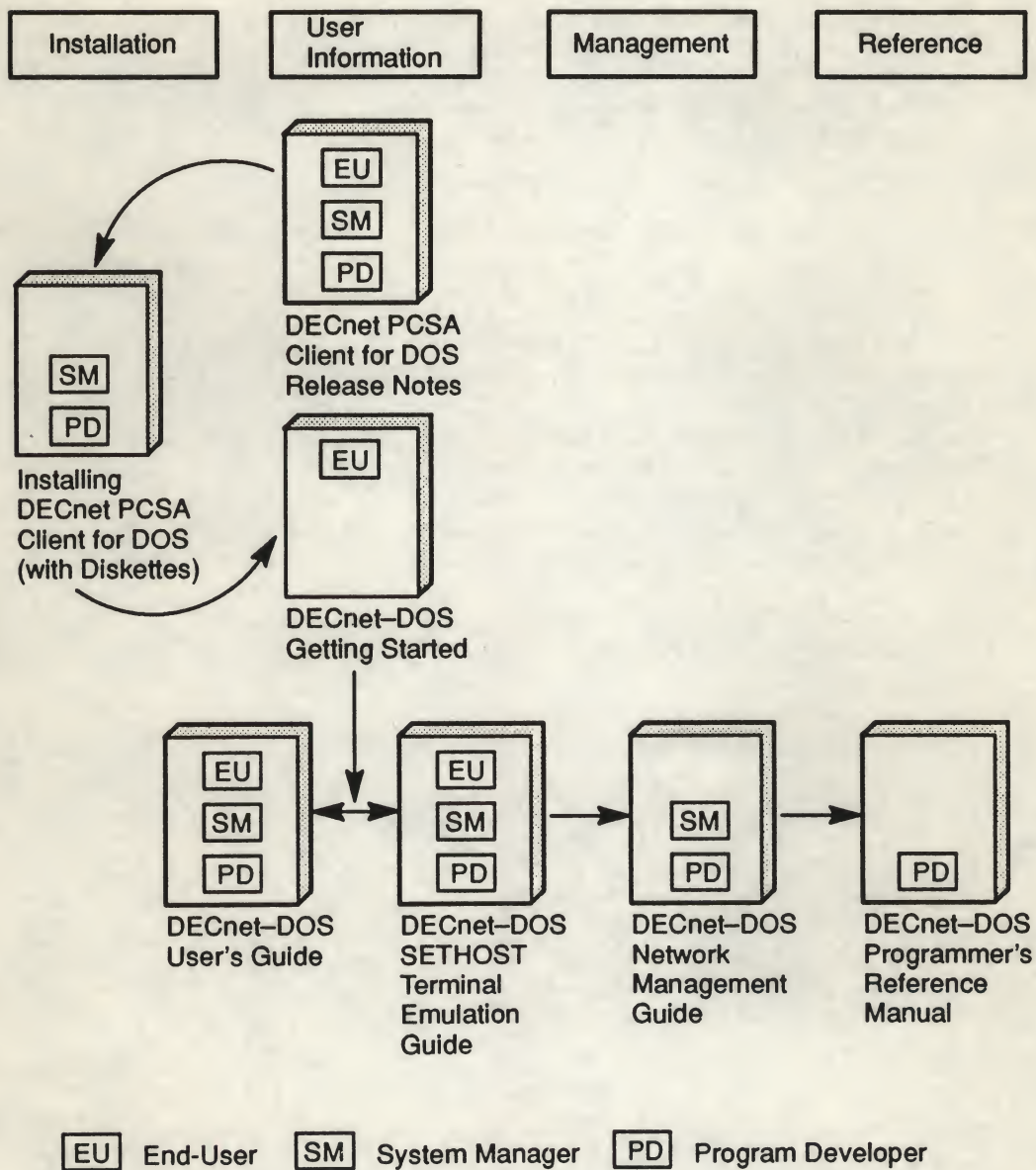
It is important that you also read the contents of the file README.TXT, which is included on the first floppy diskette of your installation kit.

Each manual and guide in the DECnet-DOS documentation set covers different levels of technical material. As a user, you can decide how much technical information to read. Typically, there are three categories of users.

- **End-Users**—Nontechnical personal computer users
- **System Managers**—Technical users who manage their own personal computers as nodes in a DECnet network
- **Program Developers**—Highly technical users who develop DECnet network applications for DOS

Figure 1 displays the flow of the DECnet-DOS documentation set, indicating suggested reading paths. These reading paths are only recommendations. The entire DECnet-DOS documentation set is available to all users.

Figure 1: Reading Path Through the DECnet-DOS Documentation Set



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Diagram of a System Architecture



Figure 1: System Architecture Diagram

Introducing DECnet-DOS

1.1 What is DECnet?

DECnet™ is Digital's family of software and hardware communications products that let users of various Digital and other vendor computer systems participate in a computer network.

The peer-to-peer network environment of DECnet allows any computer, or node, to communicate with every other node in the network without consulting a central controlling node. In this environment, each node is equally responsive to user requests, allowing network users to easily gain access to applications and facilities on other nodes. This simplifies communications and data handling, and provides flexibility when configuring a network.

DECnet software, located on each system in a DECnet network, provides you with an interface that extends your computer's operating system. This network interface lets users communicate and share resources with other users in the DECnet network. Users in a network can exchange information, files, and programs.

Digital provides DECnet software for different operating systems, including:

- DECnet for OS/2™ for personal computers running the OS/2 operating system.
- DECnet-VAX™ for VAX™ computers running the VMS operating system.
- DECnet-ULTRIX™ for VAX computers running the ULTRIX operating system.

- **DECnet-DOS™** for personal computers running the DOS operating system.

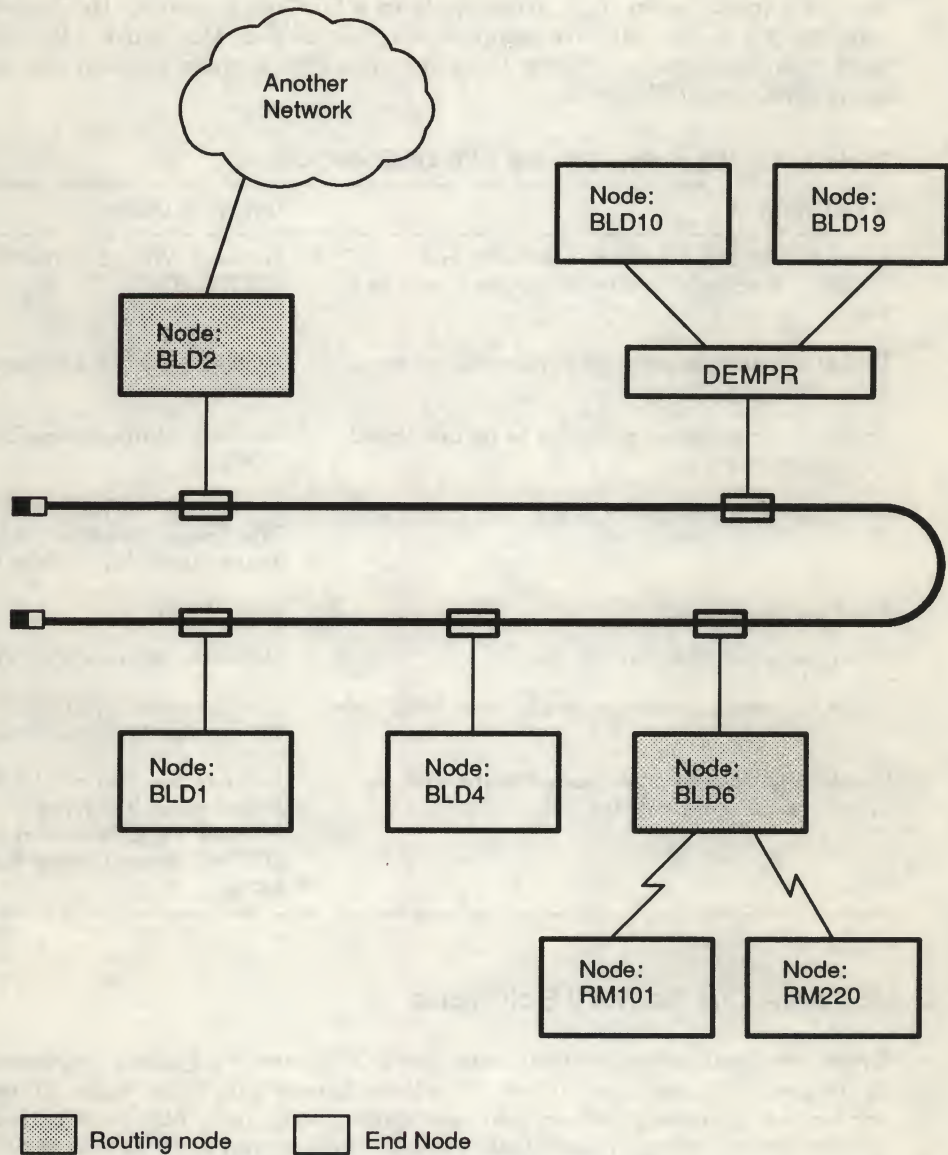
See the *DECnet PCSA Client for DOS Software Product Description* for a list of supported personal computers and operating systems.

Throughout this guide, the term **node** refers to any processor, intelligent terminal, or other computer system capable of functioning independently within a DECnet network environment. Figure 1-1 displays different types of nodes in the context of a DECnet network:

- An **adjacent node** is physically connected to another node by a single communications line, such as BLD1 and BLD4.
- An **end node**, such as BLD10, BLD19, BLD1, BLD4, RM101, or RM220 can receive information for its own use only; it cannot receive messages and subsequently route them to another node.
 - Your personal computer is an end node. An end node is connected to another node by a single line.
 - An end node may be physically connected to the adjacent routing node or directly to the Ethernet local area network (LAN).
- A **routing node**, such as the shaded nodes in Figure 1-1 (BLD2 and BLD6), can receive and forward information from one node in the DECnet network to another node or network.
- An **executor node** can perform network management functions.
- A **local node** is the node on which you are physically working when you type in commands. For instance, if you are typing commands at the node RM101, RM101 is your local node.
- A **remote node** is any node in the network other than your local node. For example, if your local node is RM101, all other nodes in the sample network are remote nodes.

The term DEMPR in Figure 1-1 refers to the Digital ThinWire Ethernet Multiport Repeater. See Figure 1-1 for an illustration of a sample DECnet network.

Figure 1-1: A Sample DECnet Network



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1.2 What is DECnet-DOS?

DECnet-DOS is software that lets supported personal computers, running the DOS operating system, participate in a DECnet network. DECnet-DOS consists of a set of software components, or modules, that work with the DOS operating system. Table 1-1 lists some of the tasks you can accomplish using DECnet-DOS utilities.

Table 1-1: What You Can Do with DECnet-DOS

If You Want to	Use This Utility
Emulate VT52™, VT100™, VT200™, and VT220™ terminals to directly access a host system	Network Virtual Terminal (SETHOST)
Test and maintain your network configuration	Network Control Program (NCP)
Enable your personal computer to be monitored by another system	Network Management Listener (NML)
Exchange files with other users	Network File Transfer (NFT) File Access Listener (FAL) Transparent File Access (TFA)
Send electronic mail	Mail (MAIL)
Share remote disks and printers	Network Device Utility (NDU)
Allow automatic remote access to your local node	Job Spawner (SPAWNER) File Access Listener (FAL)
Create applications that communicate with applications on remote nodes	Refer to the <i>DECnet-DOS Programmer's Reference Manual</i> for information on DECnet programming interfaces.

1.3 DECnet-DOS Memory Solutions

Every personal computer that runs the DOS operating system imposes limits on user application memory. This limit leaves only 640K bytes of memory for the operating system and application programs. Many operating system device drivers and utilities are Terminate and Stay Resident (TSR) programs. This means that they stay resident in memory even when you are not using them. The memory that these programs use is subtracted from the total memory available to applications. DECnet-DOS supplies two possible solutions to this memory limit problem.

- Using the Expanded Memory Specification (EMS)
- Unloading network components

1.3.1 Using the Expanded Memory Specification (EMS)

Expanded memory makes room for large application programs by using memory beyond the 640k-byte limit. To access memory beyond DOS's maximum limit, you must install an Expanded Memory Manager (EMM). The EMM manages expanded memory just as the DOS operating system manages conventional memory. Refer to *Memory Solutions* for information on using expanded memory.

Using expanded memory increases the memory available for application programs. However, it may make a difference in performance. To ensure acceptable performance, see the *DECnet PCSA Client for DOS Software Product Specification* for recommended configurations.

1.3.2 Unloading DECnet-DOS Network Components

DECnet-DOS provides a way to manage memory by loading and unloading network components. With this feature, you can unload the entire network or certain components of the network, leaving more memory for application programs.

Unloading network components gives you the flexibility to switch between application programs that use a lot of memory and network applications. The unload utility is a command-driven network utility that comes with DECnet-DOS. You do not need any additional hardware to use the DECnet-DOS unload utility. Refer to *Memory Solutions* for information on unloading network components.

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DECnet-DOS Utilities

This chapter provides a brief overview of the DECnet-DOS™ utilities. For detailed information about using these utilities, refer to the *DECnet-DOS User's Guide*, the *DECnet-DOS SETHOST Terminal Emulation Guide*, or the *DECnet-DOS Network Management Guide*.

2.1 Emulating a Terminal

The DECnet-DOS virtual terminal utility (SETHOST) provides your personal computer with terminal emulation capabilities in wide area networks (WANs) and Ethernet local area networks (LANs). SETHOST provides VT52™, VT100™, VT200™, and VT220™ emulation for supported personal computers.

With SETHOST, your personal computer can connect to a remote host by emulating a VT200-series terminal so that you can use the resources of a larger system. For example, if you need to run VMS applications, your personal computer can emulate a VT220 terminal to connect to a remote VAX system.

SETHOST offers a choice of different connection types. You can establish an asynchronous terminal connection through your personal computer's communications port or establish multiple network terminal sessions by using LAT or CTERM network protocols.

SETHOST provides:

- Support for SETHOST Set-Up screens that give your terminal the same functionality as VT200-series terminals to customize your terminal emulation environment. SETHOST makes it easy to save the terminal characteristics that you need for a connection.
- The ability to create and maintain up to four active sessions. A simple control key sequence lets you move easily between active sessions.
- The ability to create a new DOS process so you can perform a local task and then return to your terminal session where you left off.
- A script language you can use to create scripts.

A script is a text file that contains commands to allow SETHOST to perform many operations automatically. For example, you can write a script to perform the following sequence:

1. Log into a VAX system using a network LAT connection
2. Read any new mail messages
3. Store the new messages in a file
4. Print the file
5. Log out

2.2 Sending Mail

The DECnet-DOS Mail utility lets you send electronic mail to other users in the DECnet network. You can send messages you create with any text editor, or send existing documents or files. An initialization file lets you personalize your Mail environment. You can supply:

- A node address where you can receive mail replies and carbon copies
- A default node name
- The name of the text editor you use for creating messages
- A personal message to appear in the mail header

2.3 Accessing Remote Files

With the DECnet-DOS Network File Transfer (NFT) utility, you can use the NFT COPY command to transfer files between your personal computer and another DECnet node.

DECnet software components handle the conversion of files, during transfer operations, to a format usable on your personal computer. For example, NFT converts the remote record oriented file into a DOS stream file that you can use at your personal computer. NFT converts the DOS stream file into a record oriented file before returning it to the remote node.

2.4 Sharing Network Resources

DECnet-DOS provides utilities that let you share network resources. These utilities include:

- The Network Device Utility (NDU)—controls access to remote printers and remote disks.
- The File Access Listener (FAL)—provides the means for users on remote nodes to access the disks and files on your personal computer.
- The Job Spawner (SPAWNER)—enables your personal computer to perform multiple service functions.

2.4.1 Using Network Devices

The NDU utility lets you access remote printers and disks as if they were local devices physically attached to your personal computer.

Virtual disks are files that appear as local disks to the personal computer user. The ability to create virtual disks is useful for providing extra storage or a target for backing up local files. Data backup and security for your personal computer database can be provided centrally by your remote host file storage system.

NDU allows you to create a network disk by assigning a local DOS device name (such as F:) to a file on a remote system. You can then perform standard DOS I/O operations to this virtual disk as if it were a local hard disk. You can open up to four virtual disks at one time. Multiple DECnet-DOS nodes can simultaneously access the same virtual disk but DECnet-DOS ensures that the access for the shared disk is read-only.

NDU also allows you to assign a local device name to a remote printer. You can then direct output to the virtual network device by specifying the device identifier, such as NPRN or LPT1. This sends the data to a file located on the remote node. When you close the connection with NDU, the file is queued to the remote system's printer.

2.4.2 Your Personal Computer as a Server

The File Access Listener (FAL) utility lets you access your personal computer's file resources from a remote terminal that is connected to a DECnet node or from another personal computer. You place your personal computer in a listening state by running the FAL software. Then, from a remote terminal or personal computer, you can use the Network File Transfer (NFT) utility to copy files, list directories, and type files that reside on the first personal computer. The normal DOS output which results from these commands appears on the remote terminal's screen.

For example, you can start FAL on the personal computer in your office before leaving for the evening. To continue work on an important memo later that evening, you can issue NFT commands, from a personal computer at home, to locate and copy the text file from the personal computer in your office. After completing edits to the file, you can transfer it to the personal computer in your office. In this example, the personal computer at your home accesses the network using an asynchronous DECnet communications link.

FAL receives file access requests from a remote node and translates them into DOS system calls. After you start it, FAL checks for appropriate access control information, and if valid, translates the requests to send or receive data. FAL can accept requests from multiple nodes.

2.4.3 Spawning Multiple Services

With the Job Spawner utility running, your personal computer acts as a server, performing multiple service functions for remote systems. When you start the Job Spawner, it "listens" for connection requests from other network nodes. These requests might include requests to access certain DECnet-DOS utilities, such as FAL or the DECnet Test Receiver (DTR). When the Job Spawner receives a connection request, it starts the appropriate utility to service that request. When the requested activity is complete, the Job Spawner continues to listen for other connection requests.

2.5 Managing and Monitoring Your Network Software

The Network Control Program (NCP) lets you manage your network software. You can use NCP to:

- Set up your personal computer as a DECnet end node.
- Maintain and update your node's DECnet databases.
- Monitor your node's operation in the network.
- Diagnose and solve communication problems.

At installation time, the installation procedure prompts you for information about your node name and address. The installation procedure runs NCP commands that define your node and start the network software for you. You can use NCP to modify or add node information or to troubleshoot your network operation.

Refer to the *DECnet-DOS Network Management Guide* for more information about when and how to use NCP commands.

2.6 Task-to-Task Network Programming

DECnet-DOS offers programming interfaces that let you enhance the task-to-task communication capabilities of DECnet. You can create network task-to-task applications that suit your specific needs. Programmers, for example, can take advantage of the VAX's computational power by passing problems to a subroutine on the VAX system, with results returned to the PC-based program.

DECnet-DOS provides a programming library of subroutines a programmer can use to write task-to-task applications. A program can access these subroutines through C or MACRO Assembly system calls. Your DECnet-DOS Kit provides source files you can use to build a programming library.

The DECnet-DOS programming interface makes it easy for network programmers to create network programs. The interface you choose depends upon several factors, including:

- The level of control over the communications process that you want your program to have
- The programming language you want to use

- Your programming knowledge of DOS and of DECnet networking concepts

DECnet-DOS also provides a NETBIOS emulation interface for network applications. NETBIOS is an industry-standard session-layer interface developed by IBM for network applications that are written to use IBM's PC LAN program. With the DECnet-DOS NETBIOS emulation installed on your personal computer, your industry-standard NETBIOS applications can communicate over a DECnet network.

For more information about network programming with DECnet-DOS, refer to the *DECnet-DOS Programmer's Reference Manual*.

DECnet-DOS User Interface

This chapter tells you how to use DECnet-DOS™, using either the command line interface or DECnet-DOS Menus.

DECnet-DOS offers a command line interface with all DECnet-DOS utilities and a menu-driven interface with selected DECnet-DOS utilities.

The DECnet-DOS menu-driven interface makes it easy for you to get started with the DECnet-DOS software. You simply run DECnet-DOS Menus and make selections. Menus run the appropriate DECnet-DOS utility, building the command lines for you.

3.1 User Interfaces

All DECnet-DOS utilities share a DOS-like command line interface, making it easy for you to run, use, and exit from any utility. Each DECnet-DOS utility provides on-line help, explaining command parameters, syntax, or usage.

DECnet-DOS also provides a menu-driven interface that makes it easy to run your DECnet-DOS software. With DECnet-DOS Menus, there is no need to memorize command parameters or syntax. Refer to Section 3.4 for help getting started with DECnet-DOS Menus.

3.2 Command Line Interface

You can use all DECnet-DOS utilities by typing commands. A DECnet-DOS utility command has the following general format:

utility command-verb [/switch] [entity]

where

<i>utility</i>	specifies the name of the utility to invoke
<i>command-verb</i>	specifies the name of the operation to perform
<i>/switch</i>	specifies the name of the switch that modifies the operation
<i>entity</i>	specifies the independent entity that the operation acts upon

When you type commands, lowercase and uppercase characters are equivalent. The following command line consists of a utility name, command verb, command switch, and an entity.

```
C:> MAIL SEND /SUBJECT="minutes" DECEMBER.DAT Return
```

This command line instructs DECnet-DOS to invoke Mail and to send the file DECEMBER.DAT as the message. The /SUBJECT switch causes Mail to assign the text string "minutes" to the subject of the message. In this case, the file DECEMBER.DAT is the entity. For more information about the Mail utility, refer to the *DECnet-DOS User's Guide*.

If you need to execute several commands in a utility, first invoke the utility. Then, you can type the command line starting with the command verb each time. This method eliminates the need to enter the utility name each time. If you press Return after entering the utility name, DECnet-DOS displays the utility prompt. The following example consists of only a utility name:

```
C:> MAIL Return
```

```
MAIL>
```

Depending on the operation that you are trying to perform, you might need more than one switch or entity. Refer to the *DECnet-DOS User's Guide*, the *DECnet-DOS SETHOST Terminal Emulation Guide*, and the *DECnet-DOS Network Management Guide* for more information on DECnet-DOS utilities.

3.3 How Menus Work

There are two types of menus in the DECnet-DOS Menus utility. One is a menu that gives you a list of items to select from, as follows:

```
Time: 01:02:21      DECnet-DOS Menus V3.0.00      Date: Thu Jan 83

Main Menu (F1 - Help, ESC - prev screen)

Join
Quit
Access Network Files ..... (NFT.EXE)
Function as a Terminal ..... (SETHOST.EXE)
Network Printers and/or Disks ..... (NDU.EXE)
Display Network Information ..... (NCP.EXE)
Change Network Information ..... (NCP.EXE)
Send Mail ..... (MAIL.EXE)
Test Network ..... (NCP.EXE)
Receive Incoming Requests ..... (FAL.EXE, SPANNER.EXE, DTR.EXE)
Exercise Network ..... (DTS.EXE)
Pass Command To DOS ..... (COMMAND.COM [pass command])
Invoke DOS Command Processor ..... (COMMAND.COM [new process])
```

The second type is a fill-in menu. This menu appears when specific information is needed. It leaves blank spaces for you to fill in, as follows:

```
Time: 01:03:17      DECnet-DOS Menus V3.0.00      Date: Thu Jan 83

NFT COPY Menu (F1 - Help, ESC - prev screen)
NFT COPY

Enter the Name of the Source File to Copy:
_____

Press TAB to Toggle Between New and Alternate Command Lines

Alternate Command Line:
_____

To Execute DOS Commands COPY, TYPE, DIR, etc or batch files
precede the command with "COMMAND /C"
Example:  COMMAND /C DIR C:.*
```


With the first menu type, the Menus utility provides default values. If you want to use the default item, all you need to do is to press **Return** to select it. If you want another choice, you can use the arrow keys to move the cursor to the item you want or type the first letter that appears on the line you select, then press **Return** to complete your selection.

For fill-in menus, you type information as prompted and use **Tab** to move from one field to the next. After you fill in the required field, press **Return**.

For a list of special keys you can use with DECnet-DOS Menus, see Table 3-1.

Table 3-1: Special Keys

Use This Key	When You Want to
Arrow Keys	Move through menu items. Also for editing command lines or fields in fill-in menus.
Return	Make a selection or command take effect.
ESC	Return to the previous screen. Also, to cancel a command or selection.
F1	Get on-line HELP.
Ctrl/C	Exit from Menus.
Ctrl/U	Clear an entry field.
TAB	Toggle back and forth between fields in a fill-in menu.
Delete	Delete a character or characters while editing fields or command lines in a fill-in menu.
Insert (Editing Keypad)	Enable the insert editing mode while editing a fill-in menu. Overstrike is the default editing mode.
Home (Editing Keypad)	Move the cursor to the beginning of an entry line in a fill-in menu.
End (Editing Keypad)	Move the cursor to the end of an entry line in a fill-in menu.

Notice that both menu types display a highlighted title bar near the top of your screen. The first line of the title bar is the menu title. For example, "Main Menu" or "NFT COPY Menu." The second line of the title bar is the command line that Menus builds for you. Menus uses this command line to run the appropriate DECnet-DOS utility. For example, if you choose the "Access Network Files" option, then either "Copy a Local File to a Remote

Node" or "Copy a Remote File to a Local Node" and continued with the COPY command, the second line in the title bar of the NFT COPY Menu could read "NFT COPY" — the beginning of a COPY command line.

3.4 Starting DECnet-DOS Menus

To run DECnet-DOS Menus, type the following at the DOS prompt:

```
c:\> DECNET Return
```

The DECnet-DOS banner appears on your screen. Press Return to display the Main Menu.

```
Time: 01:02:21      DECnet-DOS Menu: V3.0.00      Date: Thu Jan 83

Main Menu (F1 Help, ESC prev screen)

Quit
Access Network Files ..... (NFT.EXE)
Function as a Terminal ..... (SETHOST.EXE)
Network Printers and/or Disks ..... (NDU.EXE)
Display Network Information ..... (NCP.EXE)
Change Network Information ..... (NCP.EXE)
Send Mail ..... (MAIL.EXE)
Test Network ..... (NCP.EXE)
Receive Incoming Requests ..... (FAL.EXE, SPAWNER.EXE, DTR.EXE)
Exercise Network ..... (DTS.EXE)
Pass Command To DOS ..... (COMMAND.COM [pass command])
Invoke DOS Command Processor ..... (COMMAND.COM [new process])
```

When the Main Menu appears, you see the cursor positioned on the first option, "Help." "Help" is highlighted, which means that "Help" is the default selection on your Main Menu. If you want to use help, all you have to do is press Return.

If, however, you want to choose something else, use ↓ to move your cursor down to the option you want, then press Return.

For example, if you want to send electronic mail to a user on a remote DECnet node, use ↓ to move the cursor to the line that reads "Send Mail" and press Return.

A new menu appears as follows:

```
Time: 06:02:03      DECnet-DOS Menu V3.0.00      Date: Thu Jan 83
Main Menu (F1 - Help, ESC - prev screen)
MAIL

Press RETURN to continue:
```

When you press **Return** again, Menus starts the DECnet-DOS Mail Sender utility. You see the following on your screen.

```
Time: 06:18:43      DECnet-DOS Menu V3.0.00      Date: Thu Jan 83
Clock Disabled      Date Disabled
Main Menu (F1 - Help, ESC - prev screen)
MAIL

Press RETURN to continue:
MAIL - DECnet-DOS Mail Utility - V3.0
MAIL>
```

Your cursor is positioned after the MAIL> prompt. If you are not familiar with the DECnet-DOS Mail Sender utility, refer to the *DECnet-DOS User's Guide* for more information.

When you are finished sending mail, type EXIT at the MAIL> prompt, then press **[Return]** twice to return to Menu.

3.5 Getting Help

You can access on-line Help while using DECnet-DOS Menus in two different ways. One way is by selecting the Help option at the Main Menu. The following Help Menu appears on your screen.

```
Time: 01:03:43      DECnet-DOS Menu V3.0.00      Date: Thu Jan 83

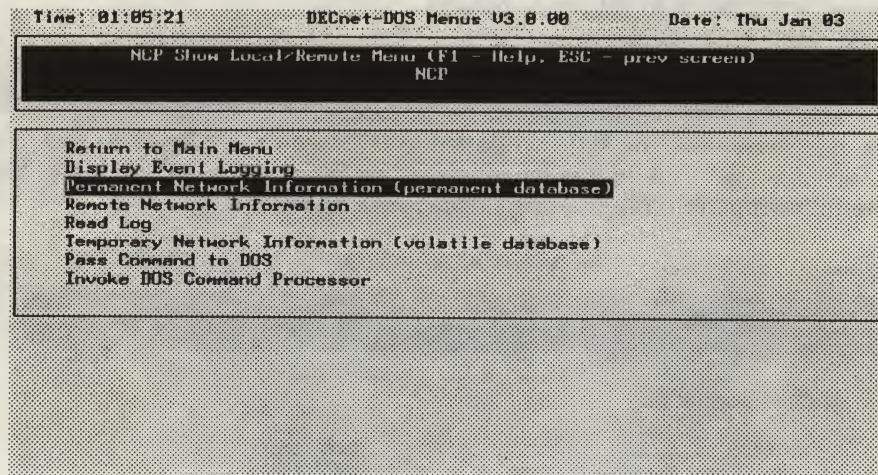
Help Menu (F1 - Help, ESC - prev screen)

Return to Main Menu
Accessing Network Files ..... (NFI.EXE)
DECnet Test Sender ..... (DTS.EXE)
DECnet Test Receiver ..... (DTR.EXE)
Displaying and Changing Network Information (MCP.EXE)
File Access Listener ..... (FAL.EXE)
Functioning as a Terminal ..... (SETHOST.EXE)
Networked Printers and/or Disks ..... (NDU.EXE)
Transparent Task Control ..... (TNT.EXE)
Sending Mail ..... (MAIL.EXE)
Spawning Incoming Requests ..... (SPAWNER.EXE)
Passing Commands to DOS ..... (COMMAND.COM [pass command])
Invoke DOS Command Processor ..... (COMMAND.COM [new process])
```

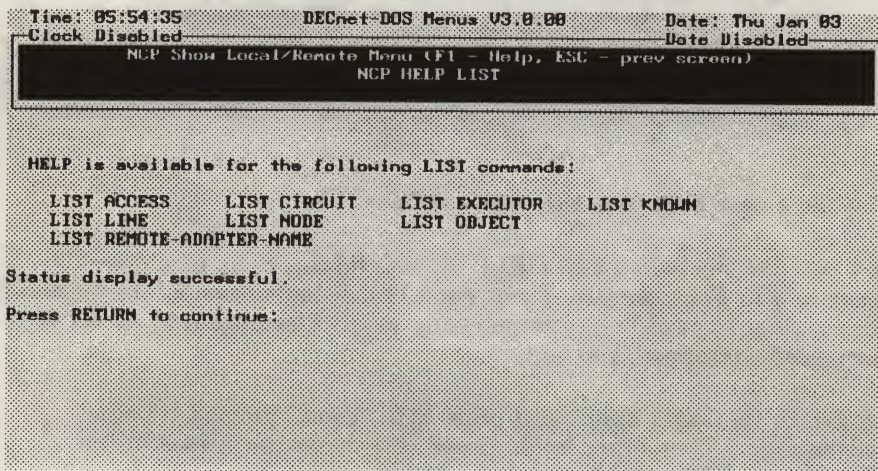
Use the arrow keys to make your selection.

You can also access on-line HELP for individual items in a menu by pressing **[F1]**. For example, if you want to display network information about your node and need help remembering what information is stored in the permanent database, you can:

Return to the Main Menu and press **[↓]** to select "Display Network Information." Then, once again press **[↓]** to move the cursor to the "Permanent Network Information" option.



Press **F1** and read the help display that appears as follows:



3.6 Passing Commands to DOS

You can issue commands, such as COPY, TYPE, or DIRECTORY, to the DOS operating system from DECnet-DOS Menus. The option "Pass Command To DOS" is available in every list-type menu as shown here.

Time: 14:54:56 DECnet-DOS Menus V3.0.00 Date: Thu Jan 03

Main Menu (F1 - Help, ESC - prev screen)

Help
 Quit
 Access Network Files (NFI.EXE)
 Function as a Terminal (SETHOST.EXE)
 Network Printers and/or Disks (NDU.EXE)
 Display Network Information (NCP.EXE)
 Change Network Information (NCP.EXE)
 Send Mail (MAIL.EXE)
 Test Network (NCP.EXE)
 Receive Incoming Requests (FAL.EXE, SPANNER.EXE, DTR.EXE)
 Exercise Network (DTS.EXE)
 Pass Command To DOS (COMMAND.COM [pass command])
 Invoke DOS Command Processor (COMMAND.COM [new process])

If you select the "Pass Command To DOS" option, the following fill-in menu appears on your screen.

Time: 05:58:00 DECnet-DOS Menus V3.0.00 Date: Thu Jan 03

Main Menu (F1 Help, ESC prev screen)

Enter Command Line to be executed:

Press TAB to Toggle Between New and Alternate Command Lines

Alternate Command Line:

To Execute DOS Commands COPY, TYPE, DIR, etc or batch files
 precede the command with "COMMAND /C"
 Example: COMMAND /C DIR C:.*

This fill-in menu has two boxes; the first box is blank and labeled with the instruction:

Enter Command Line to be executed:

This is where you type the DOS command you want to issue. Press **Return** when you are finished entering the command.

DOS processes the command and returns results to your screen. Press **Return** to continue using Menus.

The second box, labeled "Alternate Command Line" appears in all fill-in menus. This box always displays the last command you issued. You can execute the command in this box by leaving the first box empty and pressing **Tab** to get to the alternate command box, and then pressing **Return**. Use **Tab** to move the cursor back and forth between the two boxes.

3.7 Spawning Another DOS Session

In addition to passing one command at a time to the DOS operating system, you can start a new DOS process from DECnet-DOS Menus. The option "Invoke DOS Command Processor" is available in every list-type menu. If you select this option, Menus invokes the DOS command processor COMMAND.COM to start a new DOS session. A screen similar to the following may appear:

Type EXIT to Return to DECnet-DOS Menus

The IBM Personal Computer DOS

Version 4.0 (C)Copyright International Business Machine Corp 1981, 1986, 1988

(C)Copyright Microsoft Corp 1981, 1986, 1988

C:\>

The DOS prompt appears after the copyright text. You can enter any DOS command or run other programs. When you finish, remember to type **EXIT** at the DOS prompt to return to Menus.

3.8 Understanding Messages

While using DECnet-DOS Menus, you may receive status or error messages. These messages are generated either by the Menus utility itself, or by the DECnet-DOS utility that Menus runs for you.

For example, Menus displays messages that tell you what to do next, such as:

- Please Press Up-Arrow, Down-Arrow or Return
- Press Return to continue:

- Type EXIT to return to DECnet-DOS Menus

Menus also displays informational messages, including:

- Status display successful
- Status display failed

DECnet-DOS utilities may return messages that indicate an error condition. For example:

- From NFT: Error: File not found: *filename.ext*
- From NCP: Could not find node name with node address = 55.10

If you receive messages that indicate an error condition, refer to the *DECnet-DOS User's Guide*, the *DECnet-DOS SETHOST Terminal Emulation Guide*, or the *DECnet-DOS Network Management Guide* for an explanation and for information about what you should do next.

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